

# ADDITIONS TO THE TERMITE FAUNA OF WESTERN AND SOUTH AUSTRALIA

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The most recent complete account of the Western Australian termites is contained in Hill's (1942) monograph of the termites of the Australian region, although the nomenclature has since been revised by Snyder (1949). Collecting in recent years has added considerably to the State's termite fauna, and some of the results are given by Gay (1955, 1956) and Calaby and Gay (1956). In this paper a further 7 species are recorded in Western Australia for the first time, with details of their known occurrence in the State and brief notes on biology. The paper also records the presence on Eyre's Peninsula, South Australia, of one species previously thought to be restricted to south-western Australia.

The new records are listed hereunder. Unless otherwise stated the material was collected by the author. A representative collection of all material listed is deposited in the Division of Entomology Museum, C.S.I.R.O., Canberra. The author is most grateful to Mr. F. J. Gay of that Division for identification of specimens.

## *AMITERMES COLONUS* Hill

**Distribution:** New South Wales (Hill, 1942). Western Australian records are as follows:— 2 miles NE. Abydos Hstd., 7.vi.1953; 3 miles E. Fraser Range Hstd., 7.viii.1952; 30 miles E. Peak Hill, 23.v.1953; 10 miles E. Wittenoom, 26.v.1953.

**Biology:** Of the 4 series of this rare termite collected in Western Australia, 2 were found in dry horse dung and galleries in the soil beneath, one was under a stone and the last one in shallow soil galleries under a log and in the rotting earth-filled interior of the log. The Wittenoom series included reproductive nymphs, but the others contained workers and soldiers only. The alate caste is not known.

## *AMITERMES DARWINI* Hill

**Distribution:** Northern Territory (Hill, 1942). Western Australian records are as follows:— 24 miles SSW. Coolawanyah Hstd., 2.vi.1953; Hooley Hstd., 30.v.1953; 6 miles E. Hooley Hstd., 31.v.1953; 20 miles WNW. Hooley Hstd., 30.v.1953; Kalgoorlie, 31.x.1947 (T. Greaves and J.H.C.); 21 miles ESE. Mt. Florence Hstd., 26.v.1953; 19 miles NE. Mundiwiadi, 24.v.1953; 31 miles SW. Mundiwindi, 24.v.1953; 26 miles SSW. Oaslow, 13.vi.1953; 31 miles NNE. Paynes Find, 21.v.1953; 4 miles W. Roy Hill Hstd., 25.v.1953; 6 miles ENE. Sherlock Hstd., 11.vi.1953; 10 miles E. Wittenoom, 26.v.1953; 52 miles E. Wittenoom (2 series), 26.v.1953.

**Biology:** Of the 15 series so far collected in Western Australia, 4 were found in galleries under stones and 3 in galleries under old and embedded logs. Three series were collected under dry cow dung and a further one was taken from sheep dung which the termites had covered with a thin hard shell of cemented earth. One series occurred under a thin cemented earth plaster over dead leaves and other litter and the remaining 2 series were taken from deserted mound nests of other species, *Drepanotermes rubriceps* (Froggatt) in one case and *Tumulitermes tumuli* (Froggatt) in the other.

## AMITERMES MODICUS Hill

**Distribution:** New South Wales, South Australia (Hill, 1942). Western Australian records are as follows:— 4 miles SE. Arrino, 28.x.1955 (J.H.C. and F. J. Gay); 19 miles SSW. Beverley (2 series), 11.viii.1954; 5 miles E. Bilbarin, 3.iv.1953; 8 miles E. Bilbarin, 5.iv.1953; 12 miles SSW. Booanya Rock, 11.xii.1953; 9 miles WSW. Bulla Bulling, 29.x.1954 (J.H.C. and F.J.G.); 1 mile NNW. Buntline, 14.iv.1953; 8 miles NE. Coolgardie, 26.x.1954; (J.H.C. and F.J.G.); 47 miles W. Coolgardie, 9.viii.1952; 6 miles W. Dale Bridge, 16.i.1953; Danlill, 20.ix.1952; 10 miles SE. Darkan, 22.i.1953; Debelin Roek (2 series), 26.xi.1947 (M. M. H. Wallace); Dryandra (2 series), 15.ix.1954; 2 miles SW. Higginsville, 25.x.1954 (J.H.C. and F.J.G.); 5 miles NNW. Higginsville, 25.x.1954 (J.H.C. and F.J.G.); 2 miles SSE. Ilighbury, 30.x.1953; 9 miles NW. Israelite Bay (T.G. and J.H.C.), 18.xi.1947; 14 miles N. Kalannie, 28.iv.1953; 11 miles W. Kalannie (2 series), 29.iv.1953; 1 mile W. Kellerberrin, 31.x.1954 (J.H.C. and F.J.G.); 2 miles NNE. Kojonup (2 series), 24.iii.1955; 4 miles NE. Kukerin, 20.x.1954 (J.H.C. and F.J.G.); 2 miles E. Moonljin, 30.x.1952; 2 miles S. Morawa, 15.iv.1953; 21 miles W. Naretha, 25.x.1947 (T.G. and J.H.C.); Newman Rocks, 9.xii.1953; 29 miles ENE. Norseman, 8.xii.1953; 8 miles NNW. Nyabing, 2.ii.1953; 30 miles E. Pingrup, 5.ii.1953; 37 miles E. Pingrup, 4.ii.1953; 45 miles E. Pingrup (2 series), 4.ii.1953; 1 mile N. Prowaka, 16.iii.1953; 26 miles W. Randells, 27.x.1947 (T.G. and J.H.C.); 2 miles W. Ravensthorpe, 10.x.1947 (T.G. and J.H.C.); 1 mile S. Salmon Gums, 24.x.1954 (J.H.C. and F.J.G.); 2 miles S. Salmon Gums, 21.x.1954 (J.H.C. and F.J.G.); 3 miles SSE. Walebing, 28.viii.1953; 15 miles NW. Williams, 8.x.1953; 15 miles NE. Wubin, 20.v.1953; 45 miles NE. Wubin, 20.v.1953; 2 miles N. Wyening, 13.iv.1953; 5 miles SW. York (2 series), 16.i.1953.

**Biology:** *A. modicus* is a common species in south-western Australia and has been collected in a variety of situations but most commonly in galleries under or in old or rotting logs, mallee roots, and other pieces of wood. It is often found in galleries in the hard clay walls of the nests of *Coptotermes aenaciformis* (Froggatt) and commonly occupies parts of the mound nests of *Amitermes obeuntis* Silvestri. In the mounds and also under pieces of wood it often occurs in association with other termites, such as *Heterotermes platycephalus* (Froggatt), *H. ferox* (Froggatt), *Schedorhinotermes reticulatus* (Froggatt), *Ahamitermes hillii* Nicholls, *Microcerotermes serratus* (Froggatt), *Termes kraepelini* (Silvestri), *Paraeapritermes hesperus* Gay, *Tumulitermes apiocephalus* (Silvestri) and *Oecasitermes oecusus* (Silvestri). Occasional series have been taken from galleries under stones and one was collected in galleries among the roots of a grass tussock.

Reproductive nymphs have been found in nests in October, January, February and April, and alates in February, March and April. Neotenic reproductives were collected from one nest. The alate caste of *A. modicus* is undescribed at present.

The dispersal flight has been observed on one occasion only, on March 24, when alates were seen emerging from two nests. In one case there was a single escape hole in the side of an occupied mound of *A. obeuntis* and in the other there were a number of holes in bare soil. The alates issued in ones or twos and crawled around on the soil or up grass stalks for a few moments before launching. The flight began at 10.50 a.m. and took place during and after a thunderstorm with fairly heavy rain, which began about 20 minutes before emergence. Fairly large numbers flew for

30 minutes and then subsided, but odd ones were seen launching up to one hour after the beginning of flight. No workers or soldiers were on the surface during the flight but the emergence holes were lined with workers with their heads and waving antennae projecting. For an hour after the flight ended numbers of de-alates were seen resting, or running about individually or in tandem, on bare soil or old logs.

### *AMITERMES PERELEGANS* Hill

**Distribution:** Northern Territory (Hill, 1942). Western Australian records are as follows:— Meekatharra, 23.v.1953; 4 miles NE. Nannine, 23.v.1953; 14 miles NNE. Whim Creek, 4.vi.1953; 43 miles NE. Wubin, 20.v.1953. A series of alates taken while flying to a lamp at 8 p.m. on a warm very humid night (18 miles E. Mingenew, 19.ii.1955 (A. R. Main)) are close to, and possibly are, *perelegans* but some of the characters of the specimens are outside the limits of the species as at present defined.

**Biology:** Two of the 4 series from Western Australia were collected from galleries under stones and another occupied part of a deserted mound of *Tumulitermes tumuli* (Froggatt). The fourth series was taken from galleries in the outer few inches of an occupied mound of *Nasutitermes triodiae* (Froggatt), 4 feet from ground level. The series from near Wubin included reproductive nymphs.

### *MICROCEROTERMES BOREUS* Hill

**Distribution:** Northern Territory (Hill, 1942). Western Australian records are as follows:— 84 miles NNW. Galena, 24.x.1955 (J.H.C. and F.J.G.); 35 miles WSW. Paynes Find, 19.x.1955 (J.H.C. and F.J.G.); 11 miles E. Pindar, 21.x.1955 (J.H.C. and F.J.G.).

**Biology:** All of the series from Western Australia were associated with old wood; one was found in galleries under a log, another in black cellular galleries inside a standing stick, and the final one in soil galleries at the base of a dead tree partly plastered over with earth by a colony of *Schedorhinotermes intermedius actuosus* (Hill).

### *NASUTITERMES LONGIPENNIS* (Hill)

**Distribution:** Northern Territory and Queensland (Hill, 1942). Western Australian records are as follows:— 5 miles NW. Abydos Hstd., 8.vi.1953; Fitzroy-Paradise, 9.ix.1953 (R. G. Lukins); 10 miles E. Wittenoom, 26.v.1953; Wyndham-Katherine Research Station, 2.x.1953 (R.G.L.); Wyndham - 9 mile, 9.x.1953 (R.G.L.).

**Biology:** The 3 Kimberley series were taken from typical mound nests. One of the 2 series from the North-west was collected from galleries in the soil among the roots of a *Triodia* hummock and the other was found in a mass of black cellular earth carton under a large rock in a creek bed. The Wyndham 9-mile series included reproductive nymphs.

### *TUMULITERMES RECALVUS* (Hill)

**Distribution:** Queensland and New South Wales (Hill, 1942). Western Australian records are as follows:— Abydos Hstd. (2 series), 5.vi.1953; 43 miles NNW. Galena, 23.x.1955 (J.H.C. and F.J.G.); 51 miles NNW. Galena, 25.x.1953; Hooley Hstd., 30.v.1953; 2 miles SE. Morawa, 15.iv.1953; 2 miles S. Morawa, 15.iv.1953; 19 miles S. Mt. Magnet (2 series), 22.v.1953; 7 miles ENE. Mundabullangana Hstd., 4.vi.1953; 4 miles NE. Nannine (2 series),



23.v.1953; 10 miles S. Northampton, 19.vii.1953; 2 miles W. Northampton, 18.iii.1953; 7 miles W. Northampton, 28.x.1952; 8 miles W. Northampton, 25.x.1953; 43 miles SSE. Roy Hill Hstd., 25.v.1953; 3 miles W. Sherlock Hstd., 3.vi.1953.

**Biology:** Eighteen series of this termite have been collected in Western Australia of which 6 were found in galleries under old or embedded logs or other pieces of wood and 3 were collected under stones. Four series were found occupying parts of deserted mounds of *Tumulitermes tumuli* and 2 were taken from galleries at ground level in the hard clay walls of occupied mounds of *Coptotermes brunneus* Gay. Of the remaining 3 series, one was collected in soil galleries, another under a pad of dry cow dung and the final one from fragile earth covered runways built over eucalypt twigs and leaves lying on the ground. One of the Mt. Magnet series included nymphs. The alate caste is unknown.

In common with all species of *Tumulitermes* which have been adequately studied, *T. reedus* conserves food in stores. In this species these take the form of enlarged sections of the subterranean galleries loosely packed with small pieces of chaffed dried leaves, bark and other litter.

### *OCCASITERMES OCCASUS* (Silvestri)

**Distribution:** Formerly believed to be restricted to south-western Australia, this species is here recorded for the first time from South Australia. South Australian records are as follows:— 3 miles NW. Poochera, 31.vii.1952; 11 miles WNW. Waddikee, 31.vii.1952.

**Biology:** Both South Australian series which included all castes, were found under partly embedded old eucalypt logs, a situation in which the species is most commonly found in Western Australia.

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## AUTOTOMY OF THE TAIL IN MAMMALS

by VINCENT SERVENTY

Many animals have the ability to break off parts of the body under certain types of physical or mental stress. This is often recorded in lizards, particularly in geckoes, snake-lizards and certain skinks. The usual explanation is that the behaviour has a protective function, enabling the animal to sacrifice the tail to an enemy and escape. Later the lost part may be regrown.